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KNOTTING MATTERS

The Magazine of the International Guild of Knot Tyers

INTERNATIONAL GUILD OF KNOT TYERS

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KNOTTING MATTERS

THE MAGAZINE OF THE INTERNATIONAL GUILD OF KNOT TYERS

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The editors welcome the submission of letters, articles, photographs and sketches for publication. Correspondence may be by e-mail knottingmatters@igkt.net but more extensive items, such as articles for publication, as well as any pictures, which should be of good quality, need to be sent as attachments. All submissions must include their author's name and e-mail or postal address.

If events are to be publicised in *Knotting Matters*, note the months of publication - March, June, September and December. Although the deadline for the next issue is given at the foot of the Contents page, please note that the editors begin putting it together at least three weeks earlier.

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PLEASE NOTE: LETTERS & ARTICLES FOR THE SEPTEMBER 2020 *KNOTTING MATTERS* MUST BE RECEIVED BY 9th AUGUST

FRONT COVER: REPLACING A 100 YR-OLD COPPER MODEL WITH A NEW ONE (see p29)

EDITORIAL

Dear All,

Greetings. We hope that you are managing to stay safe. We know there are some members and their families involved in the care of Covid-19 sufferers, and to them a big thank-you.

We hope that you will have noticed that this edition is a bumper one. We wished to offer you a bit more to get your teeth into during the lockdown, including two pull-outs, one of them particularly appropriate to the times we live in.

We hope that when you start climbing the walls, you might decide that writing to *KM* is the least of all evils! What have you been itching to tell us, complain about, which technique have you been wanting to share for such a long time? What have you got up to during lockdown? (p25)

After some consultation, it has been decided that World Knot Tying Day should be moved to 18th September (pp 3, 42-43). We hope that you will be inspired to do something special, though given the present restrictions, this might require some innovative thinking on your part, but don't let that stop you!

Barry Smith offers us a reminder of the Geelong meeting in May 2021 (p12), in the hope that, by then, members will be able to make the trip.

Over the years we have been editing this magazine, a frequent comment is that some members hope to read more in *KM* on practical knotting (p10). We always prefer to have a proper mix of articles in every edition, and while there is some practical stuff in this one, we have to remind you (again and again!) that we can only publish what you send us.

The AGM had to be cancelled because of the Covid-19 restrictions in place in the UK, and the Trustees held a meeting by Zoom. Some notes of their discussion they wish to share are enclosed, along with the Summary Accounts for 2019. Following recommendations by Bob Dollar, the retiring President, Colin Grundy was installed as the new President with immediate effect, and Europa Chang Dawson has been awarded the President's Cup for the year.

We were sad to hear of the deaths of Louie Bartos, who died in February, and Catherine Goldstone, who died in March. Our condolences to both families. Louie's obituary is on p49. If we receive one for Catherine, we will publish it in September.

Thanks for responses to my request for information on nautical models.

Stay Safe!

Maurice

LETTERS TO THE EDITOR

Dear Maurice,

As I understand that *KM* did not get much feedback from the World Knot Tying Day I have decided to write and tell you what I did.

About two weeks before the day, I emailed a load of local and national radio[1] and TV programs to tell them about the day. This was without realising that the same idea had been suggested by *KM* in September. I told them that as Brexit had now finished they might want something cheerful to fill the gap in news coverage.

I also arranged to spend the day in my local library with a display and to demonstrate some knots.

Nothing was heard from the programs apart from a couple of automated replies.

Then on the Friday before the 18th I had an email from Radio Somerset asking if they could interview me by phone on the day at 10 am.

I had to say "No" because that is when I would be starting in the library but did suggest that if they could record something then I would give the interview in advance and they could edit it to suit their requirements.

This was arranged and I spoke to the presenter for about 25 minutes on the telephone. Later, I received an e-mail to say that they were very pleased and would edit out the ums and ahs to fit in the slot they had prepared. It was subsequently broadcast on the day at 10am.

On the Monday before the 18th I had another email, this time from Radio Bristol, asking if I would go in to their studio on the Wednesday in time to be interviewed at 8 am.

As I had to be there by 0730 I agreed as at that time of day I could avoid the diabolical traffic in Bristol. I parked up and was escorted through empty newsrooms to the studio and when my turn came was shown in and talked to the presenter. She had started the theme earlier and was getting phone calls from members of the public about their experiences with knots.

She could only remember and tie a Reef knot from her childhood days as a Brownie so I talked her through the Alpine butterfly which she mastered almost

1 The stations I contacted were: Radio Bristol, Radio Somerset, Radio Solent, The Today program, The One show, Points West TV news, ITV West Country news, The Breakfast show, Radio Two. Apparently the latter had their seasonal party the night before and so did not concentrate on more serious issues on the day.

at once and also showed a Flying Bowline which served to impress, even though it is not really radio material.
At the end of my piece I went home and then, after a late breakfast, proceeded to the library where I set up and spent the rest of the day.
During the day, more than two dozen people came to see the display as a direct result of the radio broadcast, as well as all the normal customers of the library which also serves as a one-stop-shop for council enquiries so is fairly busy.
Photos were taken for the Council internal newspaper, so IGKT got publicity over a lot of the South West.
I was too late for the deadline of the local free papers but intend to catch them next year. All in all quite a successful day which I finished off by e-mailing a 'Thank you' to the two radio stations that did show an interest.
Richard Hopkins

The message that I sent is added below purely for interest.
I am sending this to advise you of World Knot Tying Day organized by the International Guild of Knot Tyers.
After the election you may be seeking non-political items to relieve the "excitement" of the previous week and will be able to find time to mention this event.
The aim of the Guild, which is an educational charity, is to promote the millennia-old skills of knot tying and ropework which are rapidly dying out as other less versatile fastenings are developed..
Knots are found on every continent and date back for thousands of years but archaeological remains are relatively few, as natural fibres tend to decay if not in a suitable environment. The early cordage would have been made entirely by hand but very little has survived.
Ropemaking using specialised equipment is depicted on ancient Egyptian wall paintings. Modern machinery has come a long way from those early beginnings and the material produced is amazing in its variety and properties.
Modern technology has also produced devices such as velcro and ratchet straps, but cordage and knots will still solve most problems at considerably lower cost.
We anticipate that members, in the 30 or more countries where we are represented, will make an effort to celebrate the day.
Any publicity you can give to the event will be appreciated.
Should you wish to learn more about the Guild and knotting, then its website is www.igkt.net or you can reply and I will do my best to answer your queries.
Editors' note: It has been decided to move the date of WKTD to 18th September, the date of C W Ashley's death (see later). So this letter is timely - as a reminder of and stimulus for what can be done by members in the way of publicity.

Dear Maurice,

Gordon Teenan's report on the dearth of decent rope-work by Weymouth fishermen in the county of Dorset UK, is not a recent trend. Seamen have rarely been 'every finger a marlinspike, every hair a rope's yarn'. In July 1851, Captain Robert Waterman noted in the Challenger's log; "Of the 56 men aboard … only three could make the splices, sailor's knots and general rigging repairs that qualified them as able-bodied seamen."

Leisure boating has also lacked knotting know-how. In his 1949 book *Marlinspike Sailor*, Hervey Garrett Smith wrote, "The average newcomer to the ever-growing ranks of amateur yachtsmen comes equipped with only a slight knowledge of rope work, and most of it wrong."

Then again, Bill Beavis in his September 1982 column for *Yachting Monthly* commented, "Youth, manhood, dotage, I still fail to see how anyone can struggle through these without the accomplishment of a couple of knots. But they do … they clearly do, and most of them end up on my boat."

There is now a Dorset branch of the IGKT based in Weymouth. Might something of their activities find its way to the quayside? As an old ex-waterman, I doubt it. Co-editor of the *History & Science of Knots*, Pieter van de Griend's 1992 principle 'Survival of the Simplest' will most likely prevail.

Geoffrey Budworth

Dear Maurice,

The request (ie instruction) from on high was "Tie a bit of string to this to hang it up". Not too tight a spec you will notice, nothing about load bearing, hanging level, mustn't tip etc. This is often the case, an awful lot implied but not actually expressed, which leaves you wide open to severe criticism in the form of "That's no good, it doesn't do ..." followed by a list of things not previously mentioned. And there's also the "Is that the nicest piece of cord you could find?", or the old chestnut "Don't like the colour". Mind-reading is a gift often needed but rarely granted. Claiming "full specification not given" never works.

I first thought – just divide the circumference in three, three legs, make a loop, hang it up, job done. The problem with that was that the top rim would not bear any weight (let alone the three pieces of cord, more knots, making a loop with three lengths, adjustable to hanging level etc. So I eventually decided to use the Barrel Sling (*ABOK* #2177), and a modified

Figure-Eight knot for the hook, which tightens itself (shown expanded for clarity).

The horizontal component stops the diameter from spreading, and the base is supported across its whole width. The basket being wicker, it was possible to bypass the raised rim round the base, and the other at the top, with the added benefit that the cord is automatically held in place. At the end of the day I got away with one cord and one knot. And lived to fight another day.

N King

Dear Maurice,

In the article 'The Giant Knot[1] from the March 2020 issue of *Knotting Matters*, the knot in the electron microscopy photo[2] is not a Giant knot. The chirality is wrong and maybe that is why it was 'removed from a wound'. It is a Surgeon's noose with an extra Half hitch. The reversed chirality would weaken a noose (unlike a flat knot, where is adds security). I saw that mistake several times with residents.

Although there are often discrepancies in the figures or diagrams in various surgical articles for arthroscopic knots, it is unlikely that this is even a variant of the Giant knot. The reasons for this observation are:

The Giant knot is rarely used in surgery, and as far as I know, only used by orthopaedic surgeons in arthroscopy. It would not be used to sew up a head laceration.

The knot in the photo is tied with monofilament suture, which is commonly used in suturing the scalp, while the Giant knot would be tied with multifilament suture. Typically, scalp lacerations bleed a lot, so the practitioner tying the knot often uses a Surgeon's knot or noose to tighten the skin edges sufficiently to stop the bleeding. Surgeon's are taught hand and instrument techniques for knot tying that assure reversed chirality between throws, so that the knot does not tie down as a Granny knot (which is not secure).[3]

When a surgeon pulls up too hard with one hand, as often is done with one-hand tying, the knot will convert into a noose.

1 Hopkins R. The Giant Knot. *Knotting Matters* 2020; 146:15.

2 https://www.theguardian.com/artanddesign/gallery/2019/dec/10/scientific-phenomena-photographs-of-the-year-in-pictures-royal-society-publishing#img-15

3 Patil VP, Sandt JD, Kolle M, Dunkel J. Topological mechanics of knots and tangles. *Science* 2020; 367(6473):71-75.

Paradoxically, the caption from the original illustration of the surgical procedure states “What this image shows in great detail is the skill required by healthcare professionals in being able to accurately tie such an intricate knot with a piece of thread less than 0.25mm in diameter, in what is a ‘routine procedure’”. The illustration shows a typical noose that would occur when a Surgeon’s knot is tied followed by a reverse chirality overhand throw, when there was incorrect tension on one end of the suture. The knot in the illustration is not at all secure and can untie.

Giant knot

I agree with the author of The Giant Knot in the March issue of *Knotting Matters* that modern surgical knots have received little attention in the knotting community. Published and online discussions of knot tying technique almost exclusively ignore the knots used in laparoscopic and arthroscopic surgery. A correctly tied Giant knot is shown right.[1]

Philo Calhoun

1 Calhoun P. Extracorporeal and Arthroscopic Knots” in *Advanced Surgical Knot Tying*, 2nd Edition 2020; 79-102.

The Editors apologise for failing to attribute correctly the illustrations of surgical knots on p15 of KM 146 to Philo Calhoun, and are very pleased to have received this further enlightening correspondence from the author.

Dear Editors,
I think the items (What is This? *KM* 146) are awls for silk embroidery. The other use of the awl is to tighten up the soft cords that lace the embroidery to the frame.
[The tension on the silk fabric is further raised / adjusted? by a series of pegs and wedges. Keep well and happy knotting!
Europa

Maurice,
I know that Europa will have been in touch about the pointy thing. I attach a photo of one currently on the Web from Inkston. They call it a mounting awl. Made in China and selling at Canadian $3.07. I think the diameter at the top of the metal part, is 8.5mm.
Best wishes
Richard.

Letter to the Treasurer enclosing a kind donation to the Guild of £50
Please accept this as a donation to IGKT. I love reading the magazine even though I don’t understand a lot of it!
Mrs P Boffey

Dear Maurice,

Several times a year, I do adult leader training in Scouting, teaching Introduction to Outdoor Leadership Skills and Baloo Training, which is always an opportunity to promote the IGKT. One of the things that I always find so fascinating about teaching knots to either Scouts or Scout leaders is what I call the 'ahh! factor', when you tell them that all the knots in Scouting are just the tip of the iceberg.

I think that most adults find knots quite difficult, and so when they are taught to younger people, they find it a bit intimidating. I always try to teach that you don't need to learn every knot, but you need to be proficient at the knots you do learn and they need to be useful for what you do. More importantly, I emphasise that knotting should be fun. Whenever I'm teaching, I'm always tying some knot or other while I'm talking and it's never a required Scout knot.

We need to be teaching more than just how to tie the knot but what the knot is used for and why it is the best one for the job. This furthers the understanding of the person learning the knot. Providing this explanation, I find that sometimes people investigate further and get more involved in different knots.

I take every opportunity I can to teach knots. I always have a piece of rope with me and I probably got through 1500 to 2000 feet of rope a year. I promote the IGKT and reference the website in all my handouts.

Matthew C Allmaras

Dear Maurice,

There's a photograph of me on page 44 of *Knotting Matters* Issue #146 (March 2020), with Percy Blandford and Glad Findley at the opening of her Guildford, UK shop 'Macramé Plus', in which I'm wearing this bolo style neck-tie. But I didn't make it.

In 1983, on a visit to the Ballard ship locks & fish ladder in Seattle, Washington

State, USA, I came across a man seated on a folding stool, making and selling knotted items to passers-by from cordage in an open suit-case.

Beside him was a copy of *The Ashley Book of Knots*. So, as we chatted, I told him about the recently established IGKT, and he gave my daughter Julie this neck-tie. The knotting consists of a couple of hard-to-recognise 5L x 14B Spanish Ring Knots, unusually dressed and tightened to lie flat, then held together by a sliding 4B x 5L Turks Head.

Geoffrey Budworth

Dear Maurice,

You are always asking for pictures, so I thought that you might like some colourful postage stamps with knots on them.

Sweden 002

Sweden 003

There are rather a lot of Scout-themed stamps and I am not convinced that they are all legitimate postal items, or if they might have been sold at jamborees to decorate the front of normal post.

Thailand

UK001

This especially applies to Nagaland stamps, as there has been a lot of unrest in that area.

Also there is one whose nationality I have not worked out. Too many pictures at one time for the mind to cope with.

There is also a hobby of putting decorative stamps on envelopes and the range of these is almost endless. I did not try to collect any of these, as they are usually monochrome and lack the personality of nationally-produced stamps, although they can also be personalised with name, address or other details.

I feel certain that there are many other stamps in circulation that could be added to the list but you will have to put up with this lot for the time being.

Hope you find them interesting and can use them in some manner.

China002

Fiji

I found them by trawling the Google Images but do not think that there will be any copyright problems as they are all in the public domain.

I was also looking for stamps on other themes after reading a couple of articles in newsletters from other hobbies. The eyes do suffer after a few hours.

Richard Hopkins

Editors' note: This is only a very small selection of the knot-themed stamps that Richard has collected. Many more can be viewed on the IGKT website (www.igkt.net). There is also a collection of his stamps illustrating 'rope in use'. If members would like to add other stamps on related topics to the website collections, please contact Colin Byfleet at cr@byfleet.org

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Dear Maurice,

Within a year, the 150th edition of *Knotting Matters* will be issued. This collection will then contain in the order of 2,000 articles, a veritable gold mine associated with rope and knots. The subjects could be identified and the relevant articles collected and published, either in hard copy or electronically, and made available to interested parties. In order to test this idea I ran a search on the first 100 copies of *KM* that I have on a memory stick. I used the search function to seek out articles on Turks Heads and then did a visual search of the index on screen. In the first instance I found five articles and in the second ten in about 15 minutes. I assume that I would have achieved a higher result with the search function if I had used more terms. I then scrolled through the index in order to identify possible subjects. Below is the list that resulted:

history, braiding and sinnets, knot testing, hitches, bends, loops and nooses, hints and tips, tools, cartoons, fancy work, tutorials, quotations and poems, picture gallery.

A feature that will affect the appearance of the envisaged publication is the variety of fonts employed. Does this matter? I am willing to participate in extracting articles if it is determined that this is a worthwhile project. I think that it is at least worthy of a trial with, say, one of the subjects.

Frank Brown

Editors' note: Frank Brown has now begun a limited selection as a trial project.

Dear Maurice

In response to a letter by Brian Wedge in regard to the way the Guild is evolving, it now seems to fall into three categories, decorative, technical and last of all practical. If someone submitted a photo of a lace handkerchief with a knot in the middle it has a good chance of making the front or back page of *KM*. I stopped sending decorative photos nearly three years ago, two were of decorative knot boards by the late Bernard Cutbush and one of a knotted straw lady holding a basket of flowers with a close-up of her intricate woven straw hat.

Technical

An article by Maciej Tomczak. I thought someone had slipped papers from Technical college in my *KM* 146. I must admit it was beyond me, and I believe a lot of *KM* readers. In theory and practice there is a world of difference (try telling a trawlerman at sea in a gale how many turns he should use on a hitch he is tying, then stand well back before he gives you his answer). One hitch I have been using for over forty years, in work and leisure is one that has been talked about on TV, it can be found on YouTube and Google. To find when it was first documented you will have to go back thirty three years to *KM* 18. It is called a Snuggle hitch. It also makes an unusual slip knot.

"The Giant Knot" by Robert Hopkins

About sutures aka stitches in the photo of the Magnus hitch, there was no mention of what operation needed this type of knot. Over the last five years I have had my fair share of stitches, ones in the top of my head after an operation for a bleed on the brain. Three skin cancer ops on my face, one needing a skin graft. When I asked the surgeon about the kind of knots he used, after I told him about my interest in knotting, he said Square knots aka Reef knots. Two years ago I had open-heart surgery to have a new valve stitched in my heart, my ribs were wired back together and my chest zipped back up, so I am well acquainted with stitches.

In Richard's article all apart from one are technically slip knots which jam when pulled tight. When I tied the Giant knot in cord a few times, on two of them the knot distorted and jammed. When I tied it in fishing line I had no problems. I much prefer the working end of the Giant knot going through the loop (to make a Magnus hitch) to behind the loop in the drawing of the Giant loop.

Richard asked for alternative knots to consider. They are the Capstan knot (*ABOK* #1831) and even Ashley's section on butchers' knots (no pun intended). Two fishing knots to consider are the Centauri and the Uni knot. Like all fishing knots they need to be pulled very tight (to hook or swivel).

Practical knots

The lack of these knots is mainly due, sadly, to clever practical knotsmen

passing away. The last article I submitted to *KM* was once again classed as a letter, the single Bowline on a bight with parallel legs. A knot that eluded Ashley, a lot of knotsmen, the internet and YouTube. Once again the photos were made small as in my past articles. Unlike ones in the current *KM* and past *KM* the words (front and back) were not in my original article. The two photos front and back are a mistake, they are both from the front which a knotsman would have known.

Once again, from my letter in *KM* 143 "let's have a level playing field."

Owen K Nuttall

Editors' note: Our apology to Owen for introducing 'Front' and 'Back' to his images in error. Obviously we aren't knotsmen!

Geelong 2021 Calling

by Barry Smith

After 35 years in the shipping industry, predominantly in the tugboat operations arena, I would like to show an example of a fender we used to make for the steel barges involved in dredging. Much of our spare time was used in repairing and producing many different kinds of fenders like the tug's bow- and side-fenders. Our marline spikes were crowbars, and sledgehammers were used to tighten and firm up the hitching work on the bigger fenders with a few hands to assist. I had hoped to provide some old photos of this work but will have to put them up at a later date.

Some of the simple fenders we made were from discarded ships' lines of various large proportions and this I guess was early day upcycling – 1969. One such fender used on the flat sides of dredge barges and left there permanently, was known as the Racking Turns Fender and relatively easy to construct. I have provided photos, step by step, at the end of this piece because this has a nice appearance as a decorative piece made in small stuff..

I was fortunate enough as a young seaman to work with quite a few people of different nationalities and they all had their favourite knots and skills. I liked all their skills and practised using them all my working life up till this day.

I share these skills and spend lots of time teaching the young and the interested. Personally, I like the challenge of modern day splicing ie Kevlar, dyneema and double braids which require different kinds of tools. A love of decorative knotting and marline spike seamanship has developed.

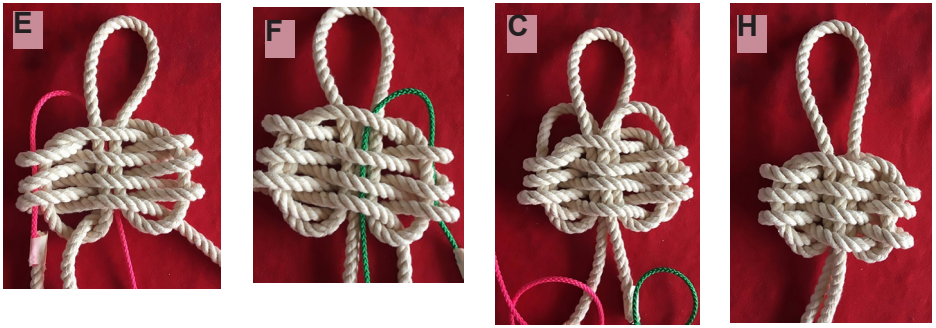
As I became a knotting book collector I found myself attempting the huge variety of decorative knots.

As a member of IGKT for many years, *Knotting Matters* has offered much to my desire to enjoy the craft of knotting. There are so many great publications offering this knowledge to encourage knotters.

The influence and encouragement of Windy Chien's 'A Year of Knots' led me to do 'Another Year of Knots' and I am a huge fan of Windy and her works. There are many great knotters out there whom I wish I could learn more from, but I am currently trying to put together 100 knots of Asian influence on a knot board, and hope it can be shown in Geelong in 2021. Until then I'll just keep tangling and swearing.

As the host of the next IGKT Australian Meeting, I would like to invite all members to Geelong in March of next year. Our National Wool Museum is giving us the space and we are surrounded by lots of interesting tourism and pastimes. We are looking forward to a great meeting and display of knotting here in Geelong in 2021 and hope we can entice our overseas members to come and show us the ropes on everything knotting.

1 Middle the material and lay out as shown in A. **2** Take right side working end over, under the two middle strands and out over bottom left. Take left side working end under, over two middle strands and out under bottom right. **3** Repeat steps in B. **4** One more repeat of B.



5 Take left working end and follow the pink path up through the horizontal loops and down the back between the vertical strands and horizontal wraps. **6** Take right working end and follow the green path up through the horizontal loops and down the front between the vertical strands and horizontal wraps. **7** Work the ends snug to your satisfaction to achieve H.

The Tools of Our Craft

by David Baugh

Have you, fellow guildmates, ever noticed that we each have several tools we like to use in our craft. There really is no right tool to accomplish some tasks, just the right tool for you. Our own Des Pawson favours a Swedish fid while others appreciate the merits of a marlinspike. Many of us own these tools and find them 'as handy as pockets on a shirt' for certain situations. But are there other things that might be even better? Please permit a bit of an exploration into some not too oft-mentioned alternative tools of our craft.

For example, a leather modeling tool (right) is my favorite fid when braiding or tying knots. Two sizes are available from Tandy International (https://tinyurl.com/y88344r7), each with a different sized spoon on each end, so you can quickly find the best for your task. The spoon shape is handy for lifting a strand or string so you can pull it tight with your thumb or move it into the correct place. This tool has a comfortable rubber handle and is made of smooth stainless steel so it is plenty strong and tough enough but will not scuff your work.

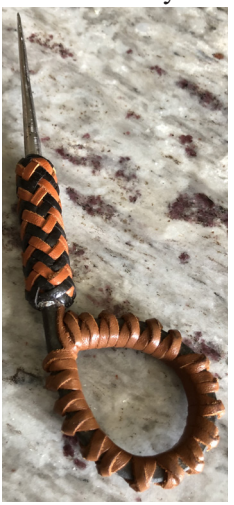
Also good to have around are some snap barrettes (left). This particular style is handy when you want to hold the last 9 of your 12 strings in place so you can take a short break from your 24-string braiding project. This one happens to be a Quirt for my daughter. Not finished yet because I took a break to write this article.

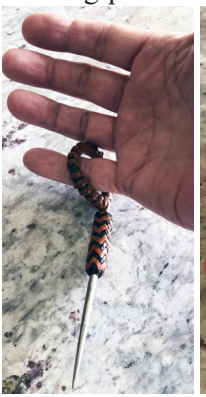
We usually like to tie up our strings into 'tacos' so they don't get tangled as we braid. Holding each end of a taco together we use small rubber bands to keeps things neat and tidy. They are available from any decent equestrian supply store. They are used to prepare a horse's mane for a competition, but they are also very handy when you don't have enough hands to hold things in place or keep things from getting snarled.

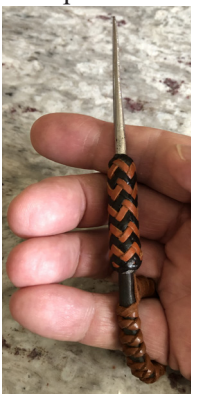
If you have spent any time tightening macramé or Turks Heads made from small stuff, you know that your fingers can get sore until you build up calluses in the right places.

Well, swing by your local leather store or saddlery and ask for some scraps of ‘oil tan’ or latigo: 5 or 6 weight leather is plenty thick enough. You only need two pieces that are about 4in (10cm) long by 1.5in (3.5cm) wide. Fold each one over and sew it together to form a sleeve to protect your little finger. Cut a small oval on the back for your knuckle (above and right). They will make tightening strings much more pleasant.

Another handy tool is an oval-shaped fid (left). This one was made from an old pitch fork (hay fork) by my rawhide-braiding mentor, Dan Wheelock (Anchor-Heart Rawhide, Gruver, TX). Notice the ring on the end. This fid is handy because it simply hangs from your little finger when not in use (below). It is always ready to swing up and into your palm when it is needed. Very handy when you need something pricked into place while tying a star knot. And the oval cross-section of the fid allows you to widen a space or move things into the correct position without disturbing the surroundings.







The point is, don’t get frustrated when something doesn’t go just right. Try a new tool and see if it helps make our craft more enjoyable, if that’s possible!

David Baugh is a retired chemical engineer living with his wife of 50 years in Oklahoma City, Oklahoma USA. He became interested in knots and braiding as a result of his interest in leather craft. He applied to join the IGKT in the fall of 2011 (*KM 113, p22).* His current projects include braiding leather whips, leather appliqué braids, knotted bell pulls and lanyards and a macramé belt (see his post on IGKT Facebook page).

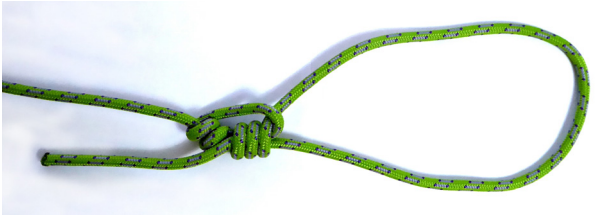
Ezelius Adjustable Knots

by Kasper Ezelius

The Ezelius adjustable grip loop and the Ezelius adjustable grip hitch are presented in separate sections. Both are based upon the same basic knot. The difference is that one ties on to the same rope, thus creating a loop, while the other ties on to another rope. The knot is a kind of friction hitch/knot (slide and grip hitch). The Ezelius adjustable hitches may be a little difficult to untie for some types of ropes.

Comparison with other knots

The Ezelius adjustable hitch excels tied in some slippery, stiff polyamide (nylon) kernmantle cords made for climbing. They can grip while the following knots, for example, fail: the adjustable Cawley hitch (*ABOK* #1994), the Tautline hitch (*ABOK* #1856), the Midshipman's hitch (*ABOK* #1855) and the Rolling hitch (*ABOK* #1734 and #1735). The Ezelius adjustable hitch is thus a useful addition to the friction knot family. The Blake's hitch of the 5/3 version seems to have a similar grip performance on some of these ropes, but the Ezelius knot might have an advantage in that it seems to be more secure and more easily dressed (ie keeping all turns in place) while tightening the knot.



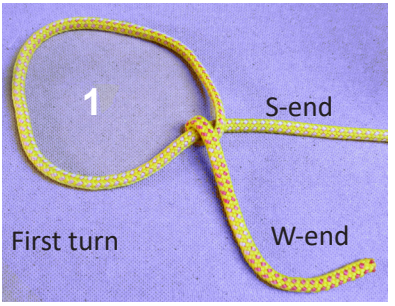
Blake's hitch (5/3 version) as adjustable loop

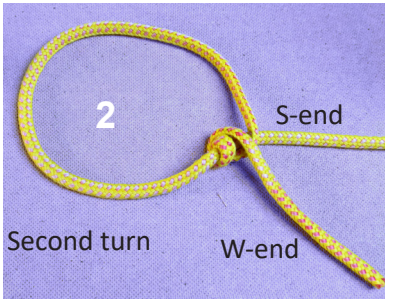
Ezelius adjustable grip loop

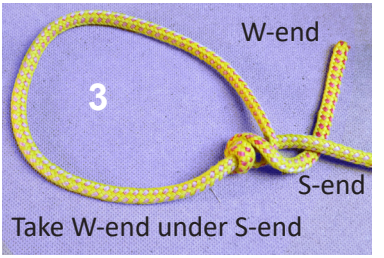
The Ezelius loop is fixed while loaded, but the size of the loop can be adjusted while unloaded. It can be used to tension guy ropes or clothes-lines, to tie down aircraft and secure loads on vehicles etc. It works well with numerous kinds of rope, eg, here from left to right:

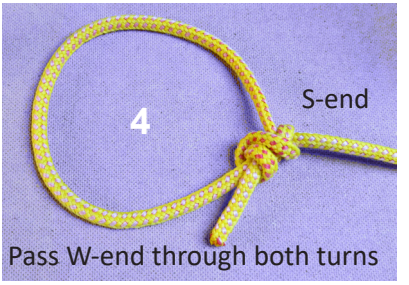
12-plait Dyneema® SK78 ⌀ 4mm
polyester band/webbing width 9mm
8-plait polyester ⌀ 2mm
8-plait polyester ⌀ 4mm
kernmantle polyamide ⌀ 5mm
kernmantle polyamide (PA6) ⌀ 6mm
kernmantle polyamide ⌀ 7mm

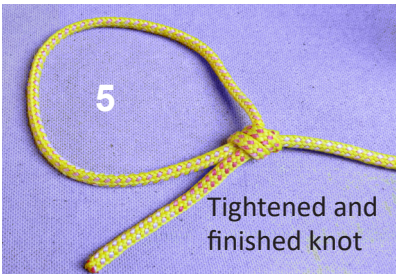
Instructions: The loop is made by taking two turns around the standing end and passing the working end under both turns, as shown. The knot is tightened by hand to achieve the desired friction.





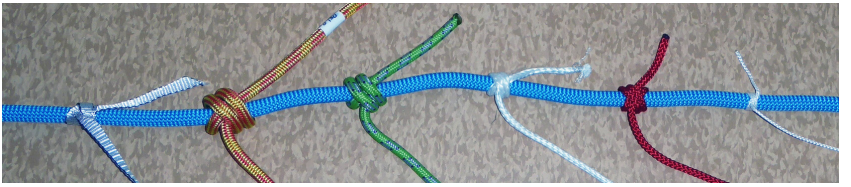






Ezelius adjustable grip hitch

The hitch can be tied in many different ropes. In the image below, various cords are attached to a dymamic climbing rope, from left to right:



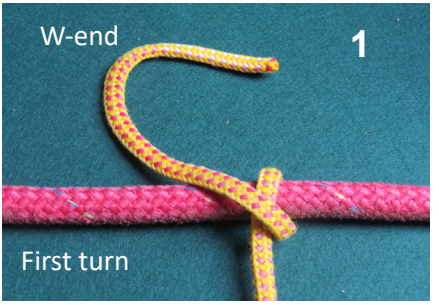
1-polyester band/webbing width 9mm, 2-kernmantle polyamide ⌀ 7mm, 3-kernmantle polyamide (PA6) ⌀ 6mm, 4-12-plait Dyneema® SK78 ⌀ 4mm, 5-8-plait polyester ⌀ 4mm, 6-plait polyester ⌀ 2mm

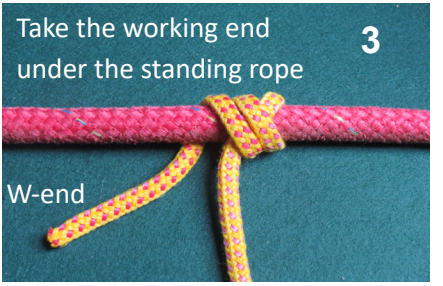
The Ezelius hitch connects one cord to another via a friction hitch. The cord may have the same or a smaller diameter than the cord it attaches to. While unloaded the knot can be moved up or down this cord.

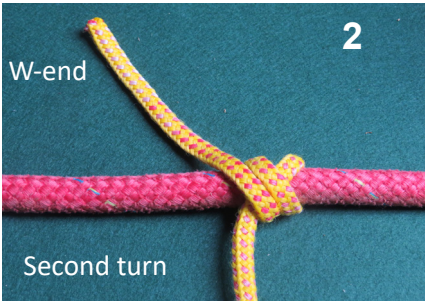
The grip is produced when the attached cord is pulled along the cord it attaches to in one direction, not both directions. The knot may be more difficult to untie if the cord it holds on to is soft.

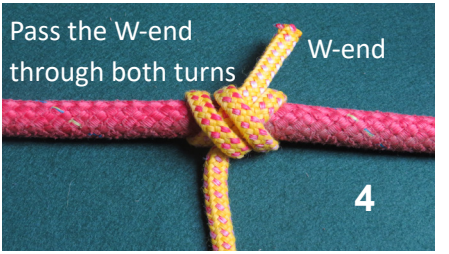
Instructions

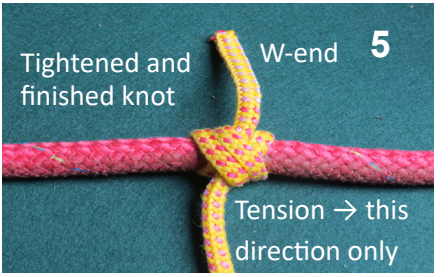
The Ezelius hitch is made by the (yellow) working rope taking two turns around the (red) standing rope and passing the working end through the turns, as shown. The knot is tightened by hand in order to achieve the desired friction.











History

Kasper Ezelius invented his Ezelius adjustable loop hitch in 2018 while trying to find a better knot than modifierad tältlineknop on page 160 in Geoffrey Budworth and Richard Hopkins' book (*Vilken knop?*, 2010, ISBN 978-91-7401-107-4) which he found unsatisfactory. He tried to create a locking knot for a loop which performed well. His idea was to go 'backwards' on the rope, to create a lever to force the standing part into a curve instead of going straight through the loose part.

My First Experience of Making a Mat

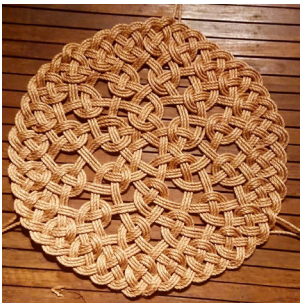
by Mac Mackenzie

Just a quick note from down under about my recent mat-making experiments. Armed with a facsimile copy only of Arvo Kinnunen's 'Purjelaivakauden Koysimatot Segelfartygsepokens Repmattor' I thought it about time that I try rope mat making for myself. I'd been looking at Arvo's mats for many years, much as I'd stared at Ashley's Solid Sinnets. They fascinated me but seemed a little out of my comfort zone, although I knew I'd get there one day, and had always set my mind on a 6/12/24 version. I was also completely knocked out with Skip Pennock's rectangular-design mat that I'd seen Dave Warlow master on a Facebook post, and figured I'd also set my sights on that.

While I don't want to get too caught up in the dimensions (as everyone would work their own tensions and choose how many passes), my 6/12/24 round mat finished up at approximately 1m diameter and the rectangular mat ended up at around 75cm x 65cm. The round one was constructed from three passes of 10mm manila and the rectangular one with three passes of 6mm manila. For both projects I had a lot of fun mapping out the template as precisely as I could using pencil, rubber, compass and ruler and fine-tuned both with a final outline of black marker. I had a pretty good idea that each project would finish up at three passes but drew the templates as a single ribbon plan, thinking that they would only be needed on the first pass of each mat. The ribbon was, however, drawn to represent the outside pass on the round mat, and the inside pass on the rectangular mat. Each of the templates was set out on chipboard and pinned out with 35mm pins. The two mats ended up being worked very differently.

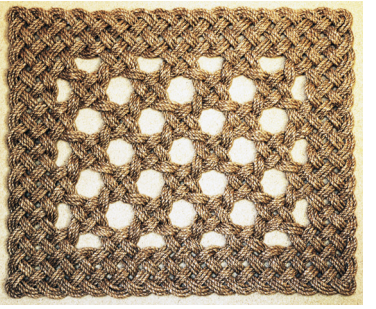
For the round mat, the pins were set so that my first pass was what ended up being the outside of the three passes. I then put the 2nd and 3rd passes of each lead on an inside path making sure that my tension wasn't strained anywhere and that it had a relaxed feel about it. I found that six inch nails came in very handy for weighting the first pass of the mats as I was working them and before enough of the design had been completed for it to interlock on the unders and overs and to hold its shape. The further I got the fewer nails were required and the better it held its shape on the pins.

I had initially envisioned that the template would be sufficient for the final vision of the mat and that I would take it straight off the pins.. But I discovered that this mat needed to be tensioned very evenly on the pins, before being removed and slowly tightened from the inside 6 to the 12 and finally to the 24 outside rings/bights. With this process it became obvious that the 6 inside rings became quite circular, the next 12 took on a slightly more teardrop shape and the final 24 were quite oval/elliptical. For some reason I had been expecting them all to be round but this just wasn't possible.



I knew the outside rings/bights would be the most problematic and decided that my ultimate aim would be to tighten them down to the point where they could not be brought any closer to the centre of the mat without any of the bights overlapping each other. I did this by taking a wooden metre rule and tightening the inside bight of each of the outer rings to a fixed distance from the centre of the mat, measuring each time I got to that inside bight as I worked my way around this first pass of each lead, then the second and then the third. It was a slow process but enabled me to keep a close eye on the tension, and to maintain an overall round mat with no overlaps as the outside gradually came in.

For the rectangular mat, my first run around the pins was made with no overs and unders using a synthetic 1.8mm cord, just to have an exact measurement of the manila needed for a single pass. I would recommend this. It enabled me to pull enough rope off the coil for the first two passes without cutting it, and then how much more to pull off (and cut) for the 3rd pass which I lay into the mat in the reverse direction. Tensioning for this mat was a much more laborious process.



Having set out the first pass, it became apparent that the second and third passes would follow both an inside and outside path against the pins. This meant that I had to take care to leave enough slack in places to allow for this, without putting anything under too much tension.

The good thing about this long process was that, unlike the round mat, once I had completed very many rounds of tensioning on the three passes the mat just came off the pins complete, tensioned correctly, and with no further work to be done on it.

This was one of the rare occasions when I sold the end-products, both to the same home. The new owner says that while the rectangular one will be used as a mat (albeit a decorative one), the round mat will be put behind glass and hung on his wall. I'm really looking forward to seeing this should it happen and will be sure to send in a photo if I can, it will be quite a proud moment for me.

As a finishing note, between the projects outlined above, I managed to put together an oval mat straight out of Des Pawson's *Knot Craft & Rope Mats*. I did this for the experience of working without a template or pins, just eyeing up the tension and plan as it was being worked.

I used the remnants of my 10mm manila and made five passes. The asymmetry of this mat can be a bit uneasy on the eye initially, until you grow accustomed to it. I've included two pictures, one working and one finished, and one Chihuahua for scale. It's now my front door mat.

Hope the above is of some help for anyone thinking of embarking on mat-making, which I'd highly recommend as an involved but highly rewarding project.

Another tool tip from John Shaw, author of *The Directory of Knots* (pub 2003)

This combined spike and shackle key (also useful on butterfly nuts) is made of stainless steel, one of many items from the French firm of Wichard (their product No 10304). It costs around UK £20·00 or its equivalent in other currencies. The ergonomic design fits right or left hands. The pinched tip on the shackle key will turn small slotted screws and prise open lidded cans. It's also a sculptural piece that could just as well grace a collector's cabinet of curiosities.

Spanish Moss *Tillandsia usneoides*

by Richard Hopkins

As those of us who have made cordage from natural materials know, there are at least thirty plants in the United Kingdom that have been used for cord.

The best known of these are nettles and brambles and the inner bark of various trees. There is even a patent, taken out in Victorian times, for using horseradish root.

Around the world, there are probably several hundred different plants used, although many belong to various branches of the same families.

One that I recently read about, but have not been able to try for myself, is Spanish Moss.

This will be familiar to film-goers as the silvery grey hairy stuff hanging from trees in the swamps in southern states of the USA.

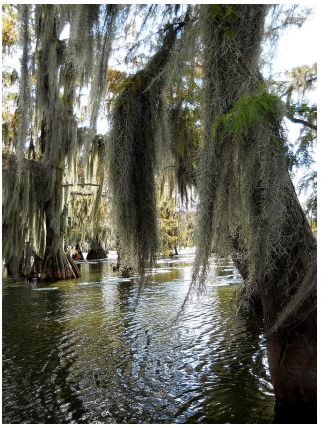
There are several explanations of how the plant got its name. The French explorers thought it resembled the beard of the Spanish conquistadors, so called it *barbe espagnol* (Spanish beard) while the Spanish called it *cabello francés* or French hair which parallels the native *Itla-okla* meaning 'tree hair'.

One popular story is that a Spanish explorer with a long beard chased after a native girl who ran away and climbed a tree. He climbed after her but his beard caught in the tree and delayed him long enough for her to escape. Strands of his beard were left in the tree and ever since it has been called Spanish Moss. It also has other names such as vegetable horsehair, black moss and long moss.

There are accounts by early explorers that the native women wore gowns made from the plant, although one man shipwrecked on the coast of Florida mentioned, rather ungallantly, that they make gowns of the moss which "at a distance and at night look very neat".

Amusing as this story is, the plant is not Spanish nor is it a moss.

In fact it is a Bromeliad, of the same family (*Bromeliaceae*) as the pineapple, although somewhat removed, and is native to the southern United States, Mexico, Central and South America. It was introduced to Hawaii and also to parts of Australia in the 19th century.



It gets all its nourishment from the air and water and does not harm the plant from which it hangs, although in some cases it may shield the host's leaves from the light and so hamper their growth. The surface of the plant is covered with tiny scales which trap water until it can be absorbed. The moss must be retted before use to separate the grey, scaly outer layers from the black vascular core strands which make up the fibres needed for rope or fabric. The plant, which can hang in lengths of 20 to 24 ft (6 to 8 metres) was collected from the trees using long poles. It is said that up to one ton could be removed from a single tree.

The moss was then stacked in piles several feet high, or else put into a pit and kept damp for three to six months, and turned occasionally. It was then hung up to dry before the waste material was removed, originally by hand, but later mechanically, and the fibres were combed and then spun. It is best spun when wet using a heavy drop spindle or a wool wheel with a simple spindle. Rope could be made from the spun fibres in the usual way by laying or plaiting.

Other uses for the fibre included building insulation and stuffing upholstery in furniture, automobiles and aircraft as it is not popular with moths. This was a major point in its favour before synthetic material was introduced. The stuffing was very hard-wearing and often outlasted the covering fabric. It was also used by the Navy in filtration plants, and in fish farms as a medium on which fish could lay their eggs. Early settlers mixed the moss with mud to make wattle and daub walls and to strengthen cob walls.

On a less commercial scale, naturally retted material can usually be found having fallen on the ground beneath most of the moss-bearing trees. If on a flood plain or a swampy area, the moss may be almost ready for use as the flow of flood water can remove much of the detritus.

If collecting from the ground there may be chiggers in it and also snakes. However, chiggers are not known to inhabit the hanging festoons, although three species of bat and rat snakes may be found in it.

If any Guild members in the USA can elaborate on these details, I would be interested to hear from them.

STRESSES in ROPES

by Tyler Atkins

The Editors' attention has twice been drawn to a recently published scientific article. They asked Tyler Atkins to explain its relevance for IGKT members.

https://tinyurl.com/ybbjyvg4

An explanation of an article in
Science Magazine, Volume 367, Issue 6473, 3 Jan 2020

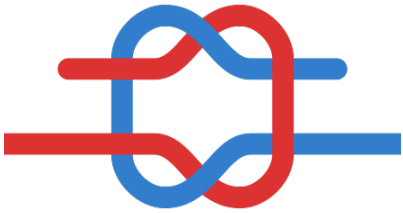
Knots have been with humanity throughout time, and are studied in many fields. From sailing and lashed structures to DNA and physics, they are continually found in different forms. They are so pervasive in life and most of our understanding of them comes from sailors' lore. There isn't a lot in the way of mathematical theory to help us understand why some knots hold fast and others tend to slip.

This gap in knowledge drove a team of researchers from the Massachusetts Institute of Technology into further investigation, utilizing a new material that changes colour when under different amounts of stress. Their goal was to define a model that could be used to predict how well a knot will stay, once tied, with a focus only on knots used to secure two lines together.

Experiments were performed to compare knots tied in the colour-changing material against a simulation to ensure the stresses on the knot were modelled accurately. They found that the amount of strain on the ropes from bends and loops wasn't a good predictor of the sturdiness of a knot. This meant that the structure is important to understanding what keeps some knots together.

What does a knot's structure entail? The direction of pull on the ropes, internal torque, friction, and the number of crossings. When using a Square knot as an example, the knot diagram shows six places where the rope crosses. The number of crossings was identified as their first value for determining a knot's stability.

For a Square knot, that value is 6, with three crossings on the bottom with the first overhand knot and three more on top to complete the Square knot. When tying or using a Square knot, load is applied to two stands of rope, which also applies a twist to the ropes as they deform and contort to create the knot.



With a Square knot, the ropes twist in one direction at the bottom and in the opposite direction at the top.

These internal torques are tallied at crossings and added together to get a total writhe, or internal self-torque of the knot. The Square knot above, when the upper ropes are pulled would generate a writhe of 0. The three crossings on the top produce three negative torques and the bottom three crossings produce three positive torques. This knot, when placed under load, holds fast better because of the balanced writhe.

This explains why a Granny knot will come undone more easily than a Square knot. Even though it had the same number of crossings as the Square knot, its writhe value is 6 because all of the contortions of the rope keep adding to the internal self-torque. They normalized this value to produce the second number for measuring a knot's stability.

Similar to a Square knot, the Thief knot also has 6 crossings and a writhe of 0, but it holds together less well than the square knot, so the writhe value isn't all one needs to consider and the team considered friction. They counted the areas where one rope was running against another rope in the opposite direction. By counting all of the touching areas, determining if the ropes pull in opposite directions, and checking the spins of these areas, they came up with the third figure used to determine a knot's stability.

Theory and software simulations are good, but are better when experiments will closely match the theories. Knot stresses were already measured with colour-changing materials. More knots were tied in polyethelyne strands and tested with increasing loads until the knot failed. Their findings were consistent with the predictions from the mathematical models.

An interesting find was that the Zeppelin knot was better for joining two ropes than an Alpine Butterfly Bend (not the Alpine Butterfly Loop). This was true with the mathematical models and in physical testing.

It will be interesting to see if anyone will take the time to evaluate more knots mathematically using these methods and compare those estimates to further physical tests in additional rope materials. If you do, write about it to *Knotting Matters*!

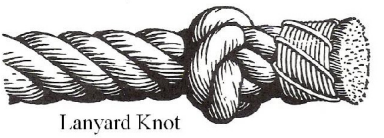
What did you do in lockdown Daddy?

Write to us with your pictures and we'll publish a selection of your 'lockdown letters' in September's *KM*.

Matthew Walker - Knot and Legend

by Mikko Snellman

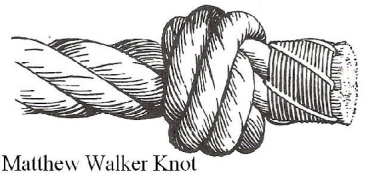
Most of us are familiar with the story about the origin of the name for this useful and beautiful knot which is often seen as a stopper on lanyards.



Lanyard Knot

From *The Ashley Book of Knots*:

"Lever's familiar expression, 'Matthew Walker's Knot', suggests that he may have known the inventor, who was possibly a master rigger in one of the British naval dockyards."



Matthew Walker Knot

"A sailor, having been sentenced to death by a judge who in earlier life had been a sailor himself, was reprieved by the judge because of their common fellowship of the sea. The judge offered the sailor a full pardon if he could show him a knot that he, the judge, could neither tie nor untie.

The sailor called for ten fathoms of rope and, having retired to the privacy of his cell, unlaid the rope halfway, put in a Matthew Walker Knot, and then laid up the rope again to the end. So Matthew Walker secured his pardon, and the world gained an excellent knot."

Ashley refers to Darcy Lever's *The Young Sea Officer's Sheet Anchor* from 1808, where the name seems to appear for the first time.

However, some years earlier, in 1803, Swedish Captain Fabian Casimir Rosvall describes the same knot in his book *Försök till Hjelpred for Nybegynnare i Skepps-Manövern* (Advice to Help Beginners in Shipbuilding), where the name hints at a less romantic origin. The book is written in old Swedish but the translation is roughly:

"The Wall knot is used in lanyards and lines that need to be stopped properly, and is single when, after one tuck, the strands are whipped together and Double when strands are tucked one more time after first tuck before being whipped together. The double will be even smarter if the strands are tucked at once under two bights and it is then called kranbalks- or schaurmans-knot. (Matthew Walker knot)."

What is interesting is that both names Rosvall gives the knot refer to the same origin: 'Kranbalk' translates as cathead but is also the name for the upper boom of a wooden crane, suggesting that the knot was used in cargo-hoisting. The knot would be the perfect choice for securing a line to a crane boom!

'Schaurman's knot' leads us to the person operating the crane. 'Shaurmann' is the old German word for a dock worker.

When we see that Hjalmar Öhrvall, in his book *Om Knutar*, has given the knot a Swedish name - 'Sjåarknop' - the legend about a famous rigger begins to crumble. 'Sjåare' is a disrespectful name for an itinerant day-labourer, a loafer, a rascal, often found in dockyards.

Both names for the knot make one wonder if this outstanding knot was adopted from dockyards to ship's rigging.

This is all speculation, of course, but could it be that Matthew Walker, instead of being a famous rigger in the Royal Navy, made his career as a day-labourer in stevedoring.

Single Line Prussic Knot

by Tyler Scott

My good friend and fellow IGKT member Bill Stanfel has been on to me to learn how to start fire by friction. He got some resources from Midwest Native Skills (www.survivalschool.com), and on their 'Fire Volume 1' DVD, we found a knot neither of us had heard of. They claim to have invented it, and after online and book research, I feel their claim is justified. When making the bow, they use a loop knot at one end, and the single line Prussic knot on the other. The Prussic is not new, but I believe this application, and being tied in one line, is.

Begin with an underhand loop

With the w-end take two turns round the s-end *inside* the loop, working upwards

Then take two turns round the s-end *outside* the loop, again working upwards

Fair the knot

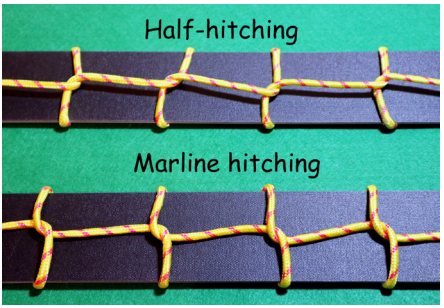
Reverse

The Law of Loop, Hitch and Bight

by Geoffrey Budworth

Any hitch which falls apart when removed from its foundation can invariably be tied in the bight, and so can loops which collapse when a single bight is withdrawn.

IGKT founder-member the late Harry Asher MA PhD identified and published the above observation in 1986[1] and again in 1989.[2] Harry was an erudite man, an inventor with patents to his name, who had also translated technical Russian documents. But it took me a while to convince him that Half-hitching (*ABOK* #3114) and Marline hitching (*ABOK* #3115) were different. He only saw them as mirror images of one another.



I had to show him that the former fell apart when slid from whatever it encircled, while the latter resulted in a series of overhand knots. So, half-hitching can be tied in the bight but marline hitching needs a working end to tie the knots. That led him, I believe, to his Law of Loop, Hitch & Bight. Strictly speaking, it is not a law but a reliable observation and useful guideline. Whether or not it is an 'invariable' one has yet to be proved. Maybe in the infinite cosmos of knotting there exists a hitch or loop that falls apart but cannot be retied in the bight. Only an elegant mathematical proof would eliminate this remote possibility.

Theory or hypothesis rather than law, it is nevertheless instructive. For example, a Clove Hitch obeys the rule: it can be cast over a bollard (and so can a Rolling hitch), the Bale Sling and Cow hitches comply (but not the Pedigree Cow hitch, one of Harry's innovations). It's true for Single and Double Constrictor knots (but not the Strangle knot), also for the Camel hitch, the Frustrator (another of Harry's discoveries), the Boom and Snuggle hitches. Single and multi-loop knots to which the rule applies include the Artillery or Man-harness loop, the Scaffold and Hangman's knots, the Jug, Jar or Bottle sling, Handcuff and Fireman's Chair knots, the Spanish Bowline and the Jury Mast knot.

1 *A New System of Knotting*, published by the IGKT in 1986

2 *The Alternative Knot Book*, published by the author in 1989

So, for all of the above and any others *KM* readers can cite, knots usually tied in the bight, may be contrived with a working end if faced with a ring, rail or stanchion.

Conversely, if a loop knot has been learned using a working end, tying it in the bight could be slicker and quicker. The angler's loop is a good example. Hitches, and loops, that do NOT fall apart when unsupported are 'the exceptions that prove the rule', and include the Ground Line hitch, the Ossel hitch and knot, the Collared hitch and, of course, the Marline hitching that led to Harry's hypothesis in the beginning.

Wire Rigging

by Tim Martin

Shortly after I read Leanne Huxley's article in *Knotting Matters* 142 on *Fencing Knots 'Gondwanan Style'*, I successfully tendered to make a copy of a model ship in copper, complete with rigging and sails. The original model was made for Portmeirion, an Italianate village in North Wales, near Porthmadog, in the 1920s, and had suffered the ravages of being on the sea wall outside the hotel for nearly 100 years.

I found that some of the original copper rigging did include knots – Clove Hitches on the masts and yard arms; Reef knots on the sails; and a Round Turn and two half hitches, and one near-perfect Scaffold binding knot below the crow's nest on the main mast. I replicated the knots on the copy ship.

My copy in my workshop

It became clear, when making the rigging, that the Reef knots were, in fact, Thief knots – this seemed to make their manufacture much easier in the copper wire. This detail was only uncovered in the process of making the copy.

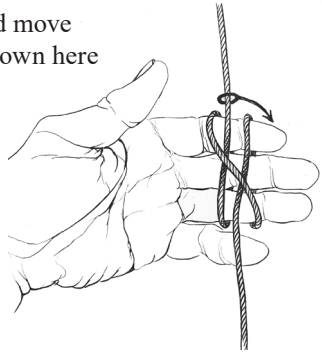
The new model ship was mounted on the sea wall at Portmeirion in mid-March 2020 (***see the front cover***) and the original was retired to go on display in the visitor museum in the village. Once the site re-opens after COVID-19 restrictions are lifted, Portmeirion, and the ship, of course, are well worth a visit! (www.portmeirion.wales). (t.martin1234@btinternet.com)

The Double Constrictor Knot

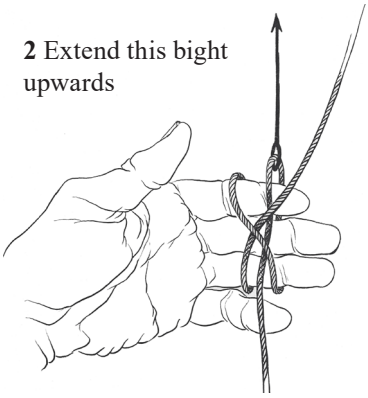
by Colin Byfleet

Here are some beautifully-drawn instructions for tying a Double Constrictor knot in the hand. The images were found in the Guild's archives. If you can identify the artist, please write to *Knotting Matters*.

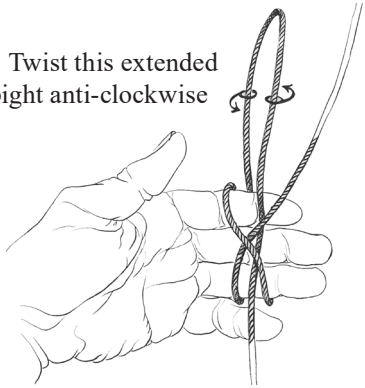
1 Tie a Clove Hitch with the lead exiting upwards, and move this lead over the top bight nearer the fingertips, as shown here



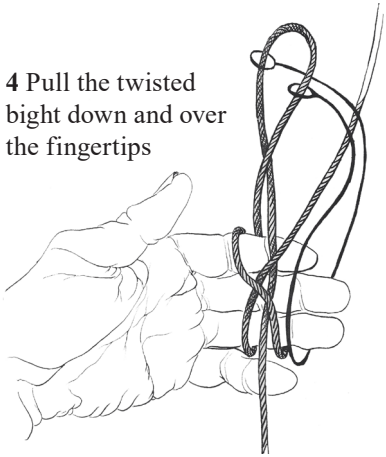
2 Extend this bight upwards



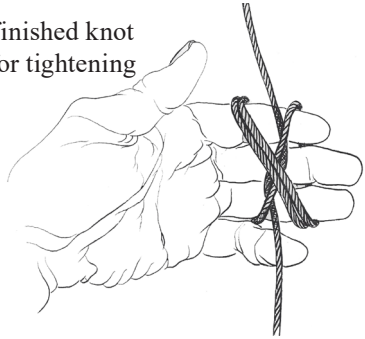
3 Twist this extended bight anti-clockwise



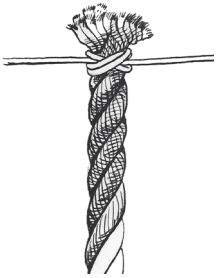
4 Pull the twisted bight down and over the fingertips



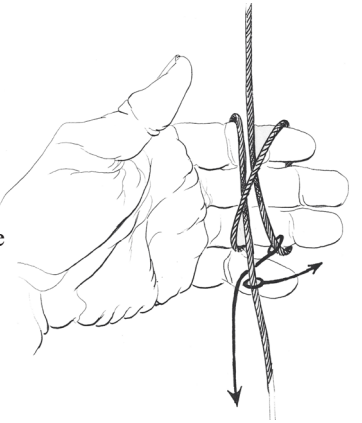
5 The finished knot ready for tightening



6 Tied: This knot grips even better than the single constrictor



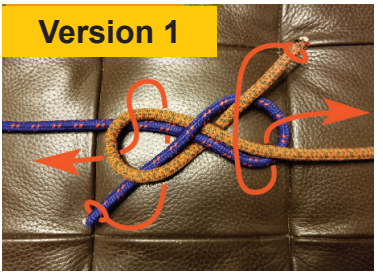
7 If the Clove Hitch is tied with the lead exiting downwards, move the lead over the lower bight nearer the fingertips and extend this bight downwards. Twist the bight clockwise and pull it upwards over the fingertips

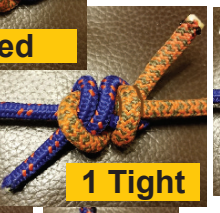


The Mia Bend

by Wu Chen

The Mia bend is easy to tie. It starts with a Thief knot. The standing parts are pulled tight to clamp the working ends. To untie, tuck the standing parts inwards. There are two versions in the placements of the standing parts inside the knot. Version 1 has the standing parts crossing. Version 2 has the standing parts parallel, side-by-side. Both shown.





The Calyx & Lotus Seedpod Knots

by Europa Chang Dawson

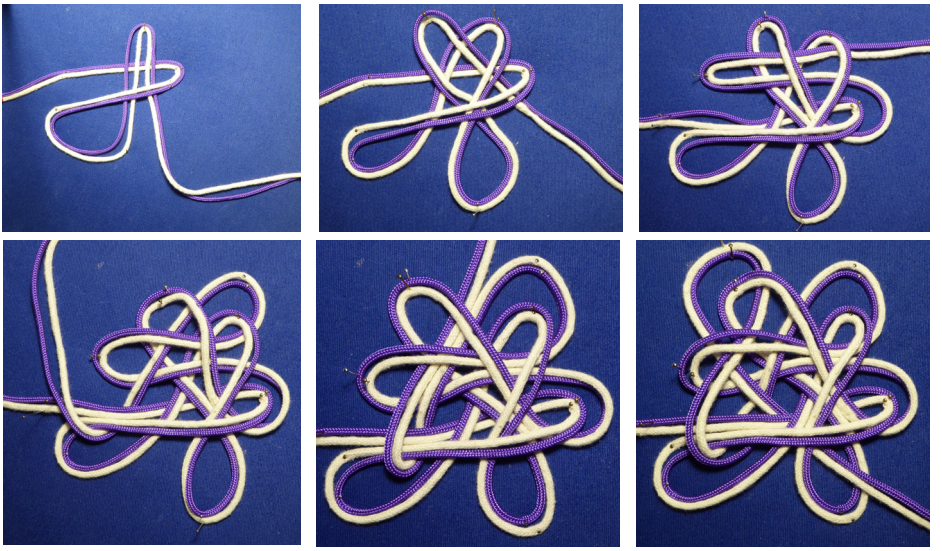
Interlinking Bights: The Calyx & Lotus seed-pod knots

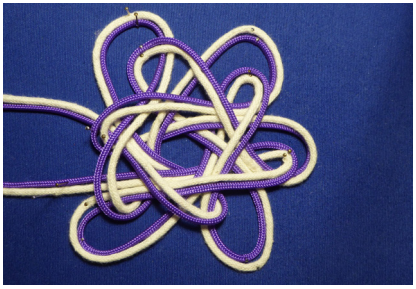
If we look at a single-strand Star knot before it is doubled, we see a structure of chained or linked bights. This is an example of simple interlinking, through one bight on each link. By the seventh bight the chain will have become floppy unless a former is put into the central hole to hold the shape.

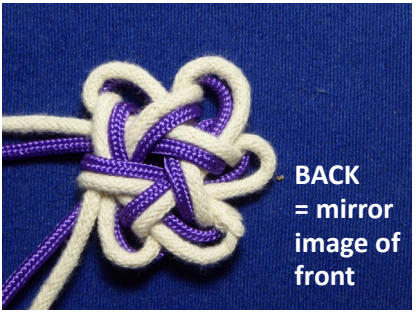
Another way of looking at the interlinked chain is to think of a set of short ends crowned over one, first in one direction and reversed on the second round. If all the short ends were then spliced in sequence the result would be an interlinked chain.

However, simple interlinking would not hold when worked in a silken cord. To give a more stable structure, the bights need to be chained through at least two links. [Think of crowning over two this time.]

This demonstration shows how six bights are interlinked, each through two links. For nine bights or more, interlinking through three bights is recommended – but don't try it until you have grasped the method for chaining through two! Once this knot is pulled up tight, it looks like the calyx of a flower (see opposite). The word for calyx is homophonic with 'precious' and 'to protect', so sometimes the name given is the 'Jewel knot' or the knot of protection.







I have always thought of it as the Chrysanthemum-bud, quite possibly because when I learnt to identify the knot I was taught in the Chinese dialect of Sichuan, and that was the name it was known by.

[The chrysanthemum flowers late in the year, and so is associated with courage as the flower is not dismayed by the harsher weather conditions. Moreover, scholars achieve their positions of authority in later life, so the flower is also associated with learning. The story books are crammed with scholars of integrity who spoke out against injustice (and frequently suffered for doing so) and they are always recorded as famous men]. Lydia Chen who did so much to revive interest in Chinese knots calls this the 'Round Brocade' knot.

Reading this knot in conjunction with the other knots in a string of good wishes, you are free to choose the name to suit the context. One book, *Chinese Knotting Patterns: Ideograms as Decorative Knotting*, in the 'rudiments' section, has the calyx knot which, to my considerable amusement, was labelled 'petal-braid' knot, and in brackets, "(formerly) the 'round brocade' knot".

One variation of the Calyx knot is known as the Lotus seedpod knot. In this variation, the working end is led back to form the missing bight and then both ends are fed into the centre. The result is vaguely hemispherical, and makes a toggle for the Chinese fastenings. The first time I spotted this, the buttons were on the shoulder-fastening of Grandmamma's third-day-of-wedding dress, an elaborately embroidered robe that was the rebus for 'May the birds of joy alight upon the twigs of marriage'. The twin toggles had five and six bights, and I was taken aback as any 'error' in such a garment would have been interpreted as an obstacle to the smooth course of a marriage.

Then I woke up to the fact that in the Chinese spoken in Sichuan, the homophones for five and six are ‘to know (or experience)’ and ‘prosperity’; Grandmamma had made the toggles deliberately.

The lotus seed-pod variation of button was also used on the collar-fastening of a jacket that Grandmamma kept for special occasions. I don’t know if this was because the garment had been part of her trousseau, or if there was a fashion for lotus seedpod buttons in the middle of the 1910s.

To return to some knotting, you may enjoy making an amulet for Times of Pestilence and Plague.

The three knots are:

1 A Calyx knot of six interlinked finger bights. The five arc-bights are pulled out to give the upper and lower wings and ‘tail’ of a butterfly, while the two ends make its antennae. [Homophonic with ‘blessings’ and ‘protection’, so we have the rebus for (May you) be blessed and protected]. The hanging loop goes through the tail-loop of the butterfly, so that it is upside down, which is homophonic with ‘to arrive’ and the green is for prosperity – the two words are homophonic in the Chinese spoken in Sichuan.

2 The bottle-gourd is made of two 2-stranded Diamond knots, the upper one (*ABOK* #787) being single and the lower one double (*ABOK* #788). The God of longevity (and Health, implied) stores his elixirs in containers made from bottle-gourds. The gourds are golden with the patina that comes from much use. Sorry about the scrappy ends. The one at the base of the gourd is meant to be there, like the little tuft of stamens at the base of an apple, but the ones on the lotus-seedpods are because that heavy cord is much easier to handle if the core and sheath move independently. Actually, when Chinese knots are tied for an individual, the ends are left unfinished in some way. The knotter is saying he/she knows there is room for improvement in the work (sort of pre-emptive strike against hubris), and the individual who receives the knot then tidies the ends in token of acceptance of the good wishes. That’s when the knotter is tying for a friend, not for a knot bought to give someone.

3 The knot of Longevity, in red, which is the colour of luck, may be a 2x2, 3x3 or 5x5 Pan Chang, depending on which gives the best proportions when compared with the bottle-gourd. As such an amulet would be assembled from odd ends, some choice is left to the discretion of the maker.

KNOTTING and TEMARI

by John Richings

I wanted to try something different, but vaguely associated with knotting. I'd read about Temari and was attracted by its symmetry and endless variety of designs and not least by the colour range.

Temari are beautiful thread balls. They don't have much more use than any other ball in that they bounce - a little. Temari balls are a folk-art form and Japanese craft that originated in China and was introduced to Japan around the 7th century AD. Temari means handball in Japanese.

Historically, temari was constructed from remnants of old kimonos. Pieces of silk cloth would be wadded up to form a ball and then the ball would be wrapped with strips of fabric and finally finished by wrapping in thread. As time passed, traditional temari became an art, with the functional stitching becoming more decorative and detailed. With the introduction of rubber to Japan, the balls went from toys to art objects. These days temari practitioners can be found world wide.

Making the mari (ball) is the first step, many people use a small polystyrene ball as the core, but others who prefer to be more traditional, use a small bag of rice husks. The core is wrapped with wool and the final surface is sewing thread. Finished decorated balls are generally 75mm to 100mm diameter, but extremely small ones are made for jewellery and very large ones are used for very complex designs. The important aim with making the mari is that it be spherical. It takes practice to ensure the wrapping threads are wound randomly and evenly over the mari.

I thought that maybe there could be a fusion of knotting and temari. So initially I decided to try a Turks Head knot.

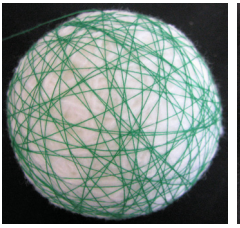
Making the mari

a) The core I use, is a 50mm dia. ball to allow about 12mm depth for stitching on a 75mm ball.

b) I cover the core with batting (used as padding in anoraks). This gives an uneven but flexible surface for wrapping the wool, and allows the mari to be moulded into a spherical form. The pins will be removed once wrapping with wool has started.

c) I wrap with the cheapest, but not coarse or lumpy, wool. I don't wrap too tightly, ensuring it is evenly spread and avoiding parallel wraps.

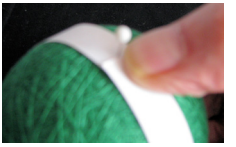
d) The final wrap is sewing thread. I put it on more tightly than the wool, the choice of colour being in harmony with the design colours. The first photo shows wrapping at the start, the second one shows the final wrap completed.



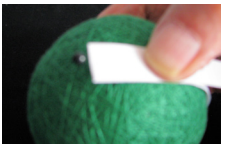
Marking the mari

Maris are marked, like segments of an orange, in 4, 6, 8, 10 or 12 simple divisions. With some experience this can be expanded to 'complex 6, 8, 10, 12'.

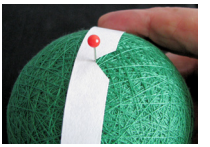
Traditionally, a paper strip is used for measuring and pins used to mark positions. Use a 6mm wide strip. Pin one end to the mari, this is the 'North Pole'. Wrap the strip around the circumference and where it meets the North pin, cut off the excess.



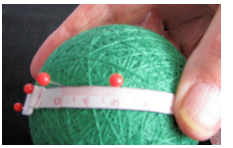
Fold the strip in half and put a pin in, this is the 'South Pole'. Check the correct position by moving the strip 90° and checking the pin position.



Fold the strip in half again, cut a small notch in it. This will be the obi or equator.

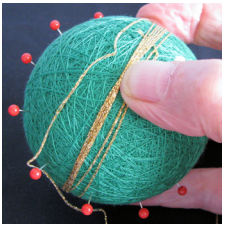


Move the strip around the obi and insert pins. This will be the guide for the tape measure as you space the pins at equal intervals.



To construct a 12B x 7L Turks Head, divide the obi into 12 equal spaces. With North, South and 12 locations on the obi, the mari can be marked with simple divisions using thread.

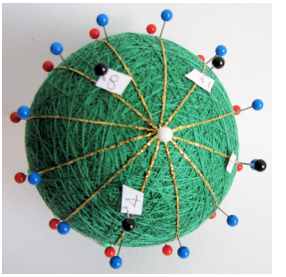
Measure eight circumferences plus about 200mm. Six circumferences are for the 12 divisions, one for the obi and one to use to tack into position the North, South and the junctions of the division and obi line.



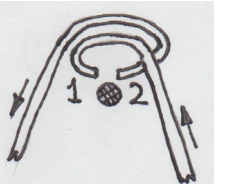
Thread the needle, put a knot at the end. Insert the needle in the mari about 25mm from the North pole and arrange for the point to emerge at the North pole start point (right), pull the thread through the mari until the knot is buried. Wind the thread carefully from North to an obi pin, on to the South pin to the obi pin, and back to the North (this is one circumference). Continue this sequence until the final South pin. At this point, tack the threads in position, then continue to North pin and tack threads at North in place. Now do the obi periphery and then tack the junctions of obi with divisions. The marking thread is then complete.

On each division line, insert a pin 20mm up from the obi. Do the same for each division line North (blue), South (green). The obi pins are red.

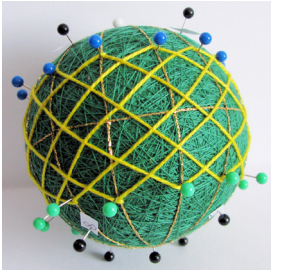
To assist threading the Turks Head, you can put extra pins with numbered tags, say 1, 4 and 11 adjacent to the blue and green pins. After the first circuit of thread, these pins may be taken out.



Now the stitching can begin. I only show one circuit of the design. A completed one can be seen at the end. Insert the threaded needle about 25mm from the South(1) pin, so that it emerges at the S1 pin. The next pin is N4 (for a run list, see later). At N4, the thread is at the right of pin. Now look at the diagram (right), called the herringbone stitch.



Insert the needle at 1, to emerge a short distance away at 2, all behind the pin. Then proceed to the next South pin. Complete the Turks Head design.



Obviously, the Turks Head design is not suitable for a sphere, but it was my first attempt. To a temari practitioner, not aware of Turks Heads, this is 'Continuous stitching' (Renzoku Kagari, Mawashi Kagari).

The thread used is cotton pearl which comes in a variety of colours and shades, but metallic and silk threads are also used.

Above are the 12B x 7L Turks Head, next to a multi strand 12B x 8L Turks Head, and the third is a nested bight knot.

Editors' note: Further examples can be found on the website www.igkt.net

International Guild of Knot Tyers
North American Branch

2020 Annual Meeting October 23-25

Colorado Springs, Colorado

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How Knot to Tie a Wallet

by Jim Caswell

I worked out this pattern several years ago, and made a prototype that took a couple of months of doing and undoing. The prototype turned out too small and not very straight, but No2 son loved it, still uses it and won't give it back. Having learnt some good lessons, I tried again putting them into practice and, after another couple of months of frustrating undoing and redoing, ended up with satisfactory result and a resolution, "I think I'll make that a once-in-a-lifetime" and put it in my 'display only' box.

Completed Wallet

I had my 'display only' box with me on my (I still can't believe it) trip to the 2013 IGKT AGM Symposium on The Queen Mary in Long Beach USA where, the then *KM* Editor, Lindsey Philpott picked the wallet up to dissect. He asked:

"Did you document how you did this?" "No!"

"Well you're just going to have to make another one, aren't you Jim?"

I'm really sorry Lindsey but, I fear I have been finding ways to put that off ever since. Thought I'd gotten away with it too until late last year when my granddaughter asked me ever so innocently;

"Grandpa, would you make me one of your wallets for my 20th birthday?"

Of course, I gave the only possible answer available to a grandfather in the circumstances;

"Why I'd love to Lily. Thank you for asking. What colour would you like?"

"Can you make it a bit smaller and in a light colour?"

So, the new, smaller, lighter-coloured wallet (above) is for Lily, and the documentation is for Lindsey (with apologies for being so tardy).

I am prepared to admit here that the main reason for procrastination was probably more to do with laziness than fear but, there are about 2,700 crossings to get wrong and it always seems that they hide their wrongness until another several metres of strand has been laid! Nothing to do but undo!

Thus my motto is now 'you only have to do it one more time than you undo it!'

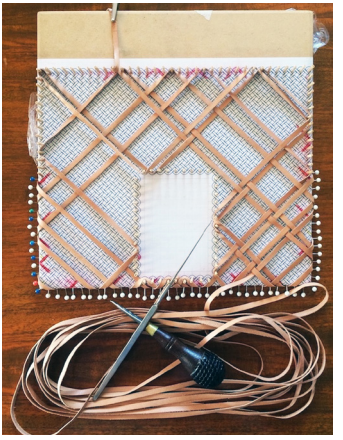
Another reason for procrastination was that, when it gets toward the end of the 'take out the slack' stage, the crossings (if they're done right) get very tight and

it only becomes practical to work the strand through 2-3 crossings at a time. With, by that stage, up to 2-3 m of slack to work through, for only 1-2cm of gain, taking out the slack can be quite tedious and hard on the fingers!

OK! I can put it off no longer. The design concept, in essence, is based on a rectangular mat pattern of 43 x 34 bights with one third folded back on itself to form a pocket. The proportions were calculated initially on 5mm wide Roo Hide strand for a standard gentleman's wallet size. To make it a bit smaller for grandaughter lady size I thought about a redesign, but took the easy (lazy) way out and decided on a narrower strand (4.5mm). But first I had to visit a tannery, find a good 'whip quality', 'natural' colour Roo hide, then cut out and prepare the lace. Maybe that's another story.

The pattern template was made from 3mm MDF, about 10% oversize to facilitate working the strand. Mapping pins worked OK as strategic strand locators around the sides but not so well on the flat surfaces where needed. I solved that problem with a 2mm drill and wooden toothpicks for pegs. After completing the template, I ran a string line around the pattern to find total length of strand required to be just over 28m.

These two pictures show knot formation in the early stages on the pattern template. With 28m of strand to work, I decided to start from the middle to reduce the amount of working strand to 14m. Note the other half of strand wrapped in 'cling wrap' and taped up to keep it clean and out of the way until needed.



Inside at start

Outside at start

After completing the knot construction on the pattern template, the caboodle was removed to a sizing template to provide a base to tighten down to. The main problem at this stage is keeping everything in shape. The sizing template only set limits for the overall width, leaving the edges with bights free and unconstrained.

This makes the task of keeping the edges straight and square virtually impossible, while working the single strand through the weave.

I needed to find a way to ensure the edges were kept straight while tension was being applied to individual bights, pretty much at random, along the edges. Needed something long, thin and unbending. Having checked out our local craft shop and found knitting needles (who'd have thought it?), I came home with a collection of aluminium needles 2mm diameter (the thinnest I could find). The needles were threaded through the crossing strands 1 row back from the edge bights (see below).

As the strand is pulled through, the needles maintain the straight edges but also allow the weave to contract to its final size as the slack is worked out.

Pulling up slack - inside

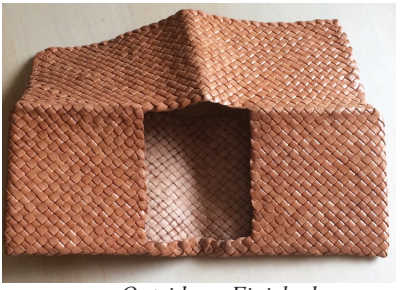
Pulling up slack - outside

The first step in this process was to pull up as much slack as possible into independent loose loops away from the edges, toward the central areas, to help define the final shape (see above).

The next task was to work out the slack and tighten everything up. The best option here (again) was starting in the middle and, working out to the ends, progressively pulling the accumulating slack out to each end of the strand. The knitting needles and sizing template were removed after all the slack had been taken up.

Inside as Finished

Only thing left to do was 'nit-pick' at the corners and edges. Smooth out with a tapping hammer and smoothing bone, put some money in the wallet (I was told it was bad luck if you don't), wrap in pretty paper with a birthday card, say "I'm very pleased that's finished!" (or words to that effect) and look forward to the expected 'grandpa hug', but that too is another story.



Outside as Finished

World Knot Tying Day 2020

by Jim Wolf

World Knot Tying Day in September this year

The second annual World Knot Tying Day (WKTD) last December generated an energy throughout the knotting community and raised the awareness of knotting with others. This year, WKTD will be celebrated on September 18th, which coincides with the date of Clifford Ashley's death. The excitement and participation levels in 2019 were encouraging, but the result was probably not as great as it could have been, had the celebration not occurred during the already event-laden December. As such, a suggestion was put to the Executive Committee to consider September 18th as an alternative date. After consulting with the original architects of WKTD and the Solent Branch, the committee decided to officially designate September 18th as WKTD.

With September as the new date, it is important to start planning how you, as an individual, or your local chapter are going to celebrate and promote WKTD. It is understood that 2020 is a unique year, and it may not be feasible to interact directly with the public. Much of what we do can be shared with others virtually through words and pictures. Social media, with all of its downfalls, is a wonderful tool for sharing with, and learning from others. One only has to look at the new Official International Guild of Knot Tyers Facebook page to see this. Please see Richard Hopkins' letter in this issue of *KM* to read how he promoted WKTD 2019.

What can you do to promote WKTD 2020?
At the very least, for yourself, learn a new knot.
Follow that up by teaching someone a new knot or knotting project. **Hint**: Use one or two of those 'How to' inserts from the last few *Knotting Matters*.
Contact your local library ask if you can decorate a display case with knot work to promote WKTD. Include in your display a list of authors, knotting related books in that library and of course IGKT promotional material. (Does anyone have a duplicate *KM* 146?).
Enjoy a Knot Supper with fellow knotters (Solent branch style).
Set up a table in a public place and work on your current knotting project. Be prepared to teach passers-by a knot. Make sure to have a visible IGKT logo, WKTD information and IGKT promotional material, downloadable from www.igkt.net

Follow Richard Hopkins' example:
Organise a local branch event or project.

To make the public aware of any planned events or displays, send a letter to the editor of your local newspaper or a press release to other print, radio, and television outlets.

A properly formulated press release can be downloaded from the IGKT website. Modify it to meet your needs, inserting the location and point of contact details as required. For best results, if sending to a daily newspaper in your community, contact the editor in charge of the appropriate section. For a weekly newspaper, send to the Editor. For a magazine, send the information to the Editor. For radio stations, try the News Director, Public Service Announcement Director. And for television station, send the release to the News Director.

In planning for WKTD 2020, include a short note to the Editor of *KM* explaining your plans. Send via email to (knottingmatters@igkt.net) or in the post: Knotting Matters, 23 Stoms Path, London SE6 3QJ, UK.

Finally, please document the results and share with the community. Post photos on your favourite social media platform using the hashtag #worldknottyingday and report back through your local branches the experiences, lessons learned and the number of people reached. We all enjoy our quarterly issues of *Knotting Matters*, so share your stories in article form or letter to the Editor for the rest of the community to enjoy.

Royal Knots

Those who declare that the Bowline is the king of knots may have come to that conclusion after agreeable experiences with this fixed loop. More likely, they picked up the catchphrase from others, who in their turn were unaware of the real source. It is a line repeated in The Bowline, a poem by A P Herbert (1898-1971). He lived beside London's river Thames, patrolled it during World War II aboard his boat Water Gypsy, and was made a Freeman of the Company of Watermen and Lightermen. But he was also a librettist, novelist, playwright, and a reforming member of the English parliament.

This poem, arguably the best ever about a knot, led John Sweet to propose in his 1974 book *Scout Pioneering* that "the queen of knots must surely be the Alpine Butterfly".

Then, in 2004, IGKT member Dick Chisholm suggested that the Figure-Eight knot, because of its adaptability to act as a bend, hitch, loop or stopper, made it, for climbers, the prince of fixed loops, perhaps heir apparent to the old king, and maybe his usurper.

Meanwhile, Guild stalwart Brion Toss had confirmed in his 1984 book *The Rigger's Apprentice* the Bowline to be the king of knots "because it is strong, secure, and versatile, as kings should be. And simple, as kings generally are."

Geoffrey Budworth

Dogging the Tails

by Colin Grundy

During the 1980s, while researching mountain rescue equipment and techniques for use in an urban environment, I came across a form of friction knot used to apply tension to a hauling rope when evacuating a casualty up a cliff face. The knot in question is known as the Dogging the Tails knot.

When hauling a casualty on a stretcher with an accompanying rescuer, some form of tackle is required. In a mountain environment, it is not possible to use a winch of the type attached to vehicles, nor is it practical to carry a mechanical winch. The length of rope needed to reach from the site of operations to the casualty can also make it impractical to use a block and tackle attached directly to the stretcher, with the length of fall being far greater than most rope lengths.

The solution is to use some form of attachment to connect a purchase to the hauling rope. Mechanical friction devices, such as Jumar clamps or similar, while excellent for a single person ascending a rope were found to reduce the breaking strength of a rope by over 60%.[1]

In addition, it was found that even with a load as low as 450kg, mechanical devices could damage the core of Kernmantel ropes while showing no adverse signs on the cover. The Dogging the Tails knot with at least eight turns, when tested, showed a reduction in breaking strength of less than 20% with no damage to the rope.

A number of tests were carried out by HM Coastguard Cliff Rescue Team at Holyhead in Wales using ropes of 3-strand, braid-on-braid, pre-stretched braided and Kernmantel construction.[2] The report does not explain what the tests were intended to achieve, but did include the following observations. At a load of 1,568lbs (585kg) there was a slippage of 1in (25.4mm), and the only damage recorded was a slight fusing of the surface fibres on the 3-strand rope. No damage was observed on the other ropes. Further tests on wet and dry ropes showed no loss of grip. One successful test used Kernmantel rope and tails that had been soaked in water for one hour and then placed in deep freeze for a further 24 hours! It is suggested that the knot was introduced to HM Coastguard during the 19th century, although it is believed that it is much older than that.

1 *Low Stretch Ropes For Mountain Rescue.* British Mountaineering Council EC/3/77

2 Dogging the Tails. Dr. Anthony S. G. Jones and David Salter, *Search and Rescue Magazine*, Fall 1979

Royal Air Force Mountain Rescue Teams certainly used the knot during the 1970s and 80s.[3]

A set of tails is made from 11mm Kernmantel rope 88 inches (2.24m) long. A thimble is whipped into the middle of the rope and the ends are whipped leaving a short tie length on each end (Picture 1).

The tails are laid over the hauling rope with the thimble towards the tensioning end, and then laced over and under the hauling rope. The tail from one side (right in this instance) must always cross the hauling rope first (Picture 2).

Lacing is continued until the whipped ends are reached, where they are tied together using the short tie ends (Picture 3). The tails must be of equal length.

The completed knot (Picture 4) can now be attached to the purchase by the thimble, ready for hauling.

The set-up for hauling comprises three anchor points at the head of the cliff (Picture 5).

The purchase, rove to advantage, is attached to the centre anchor with the moving block attached to the stretcher hauling rope (black rope) using the Dogging the Tails knot.

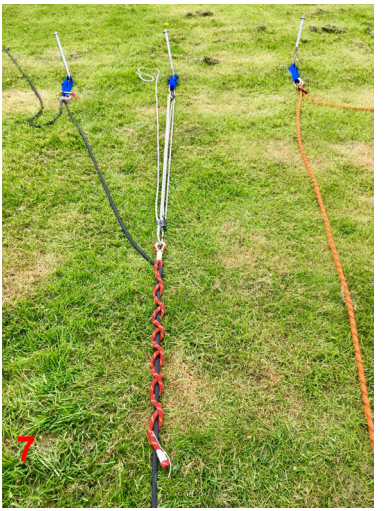
The free end of the stretcher hauling rope is then passed through a descender secured to another anchor point.

3 *Mountain Rescue Training Handbook for RAF Mountain Rescue Teams*, HMSO 1979

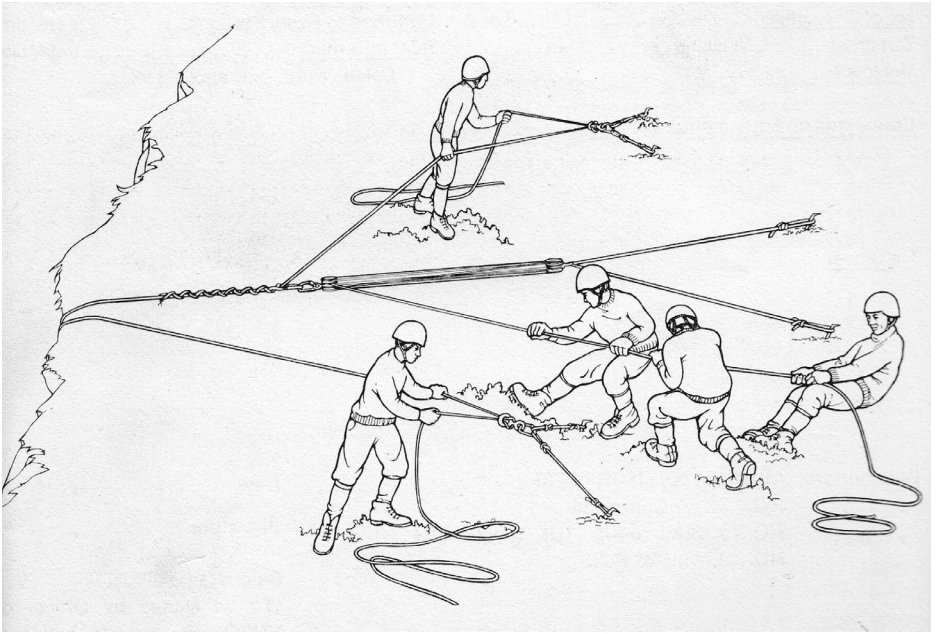
A stretcher safety rope (red rope) goes through another descender secured to the third anchor point.

As the stretcher is hauled up, the tension on both the hauling rope and the safety rope are taken up through the descenders.

When the limit of travel on the purchase has been reached, the hauling and safety ropes are locked off at the descenders (Picture 6), and the Dogging the Tails knot is then slackened by sliding the tails towards the thimble.



The purchase is extended and the Dogging the Tails knot moved forward along the hauling rope. The tails knot is then slid away from the thimble and tension taken up on the hauling rope using the purchase. The process is repeated until the stretcher reaches the head of the cliff (Picture 7).



Set-up in operation. Copyright HMSO

WHAT IS THIS? Yorkshire member Sheila Pearson's son, Matt, a doctor in New Zealand, came across this picture on Facebook but could find no information about it, and neither can we. If you know, please write and tell us.

BBC's 'Five Knots'. *KM*'s sound media stringer writes: On 3rd May (repeated on 7th) BBC Radio 4 broadcast a 30-min programme highlighting five perspectives on knots. Presented by Tiamandra Harkness and her producer Julian Mayers, it featured two IGKT members: Des Pawson answered questions on the history of knots, and Mike Lucas described his forensic investigation of knots at scenes of crime. Contributions followed from physicist Thomas Fink (co-author of *The 85 Ways to Tie a Tie*) on knot theory, Rayon Jackson who wrote *Sestina for a Black Girl who does not know How to Braid Hair*, and rock climber Dave McLeod on the Bowline vs the Figure-Eight loop and his horrendous fall from an unchecked rope. The presenter's evident enthusiasm for knots helped bring together an enlightening and entertaining half-hour.

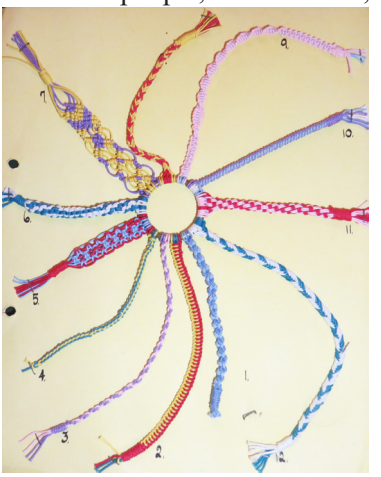
OT Training in the 1960s

by David Pepper

Dy, a very good friend of mine, attended St Loye's School of Occupational Therapy, a tertiary educational boarding establishment for girls in Exeter, Devon UK, in the 1960s. It was a 3yr course which nowadays would lead to a degree, but I suspect the modern equivalent, the degree course, is far less comprehensive in its scope. It was a pretty formal education. At the first assembly: "Stand up any girl who is pregnant" - no nonsense about political correctness in the 60s! And no forenames: for instance, Penny Jones would be called 'Miss Jones' by the staff throughout the three years.

Following an 'orientation' term, the rest of the first year was devoted to courses in anatomy, physiology, medicine and psychology, as well as practical subjects, of which printing, woodwork, knotting and braiding were amongst the less obvious components, which featured alongside the full gamut of the more traditional handicraft skills. The second year was spent on placements in a variety of hospital units, Dy's were in London, specialising in the recuperation of patients with all manner of physical, neurological and psychiatric problems. The third year was back to college for further professional training and final written, practical and oral exams.

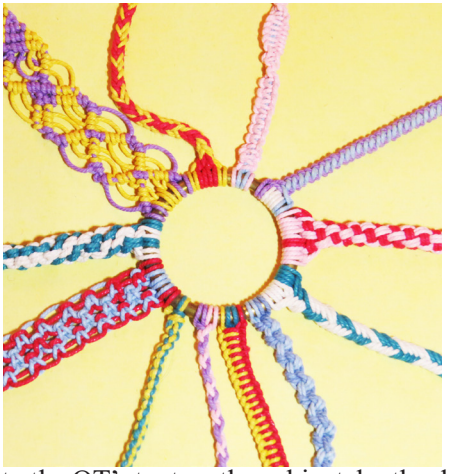
The rationale behind the practical skills training was to equip the OTs to be able to use the techniques involved to help patients develop lost (or never recognised) abilities in concentration, strength, manual dexterity, ability to stand, co-ordinate hand and eye, co-operation with other people, conversation, social interaction in various circumstances, and many other faculties important in restoring the health and wellbeing of patients.



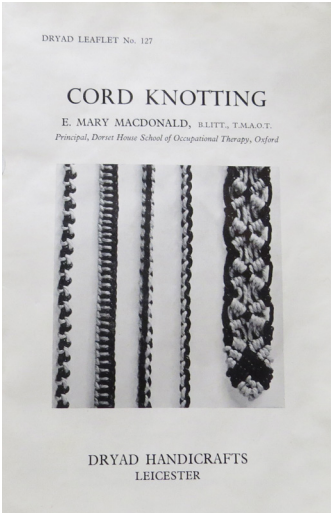
The reason I know all this is because the last time Dy and her husband came to stay with us, she presented me with a card about A4 (right).

I'm not sure whether or not it was merely knowing my interest in knots, to demonstrate her own prowess honed over 50 years ago, or to protect her against receiving yet another hempen mat, coaster or trivet from me.

Anyway, I spent an enlightening hour asking her about it.



This was Dy's design, well-preserved since 1966 (check the colours), for a compulsory exercise to exemplify the learned skills of knotting, braiding and macramé, all useful for teaching patients to re-learn how to use their sight, and hands, as well as their memory and other cognitive functions.



I was also given what amounted to the OT's text on the subject, by the distinguished principal of perhaps the most prestigious School of Occupational Therapy at that time, E Mary Macdonald.

Apparently, from time to time, the girls would set to, knotting bundles of colourful sinnets as dog leads to sell, whether for charity or to fund the end-of-term jamboree, I didn't ask. But I was surprised and delighted to discover that knotting and braiding were craft skills so important as to form part of the national Occupational Therapy training curriculum.

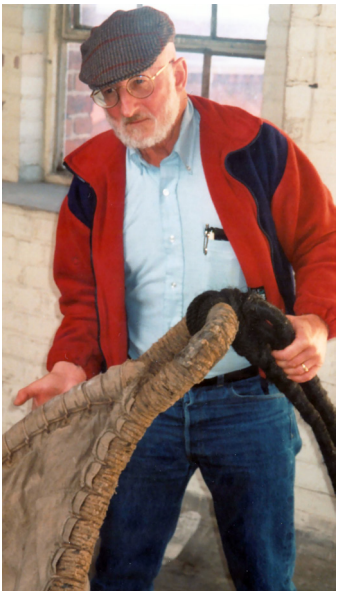
OBITUARY

LOUIE BARTOS of Ketchikan Alaska

July 29, 1936 - February 28, 2020

Louie Bartos was born, in Chicago, Illinois. He attended Northwestern Military and Naval Academy from 1950 until his graduation in 1954.

In 1956, he was involved in training manoeuvres on a World War II Destroyer in Puget Sound. A diving accident occurred during the training exercises, and he was severely injured, leaving him 'unfit for duty' in the Navy. He took a programme at Montana State College, now Montana State University, Bozeman, where he met his wife Jean. He graduated in 1961 with a degree in Range Conservation from MSU.



In 1970, he began studies at the University of Wyoming in Laramie, graduating with a Masters in Hydrology and Hydro-engineering in 1972. Working initially in Montana, Idaho, Wyoming and Utah, Louie and his family moved to Ketchikan, Alaska, where he flourished.

He retired in 1991, having completed the Chugach and Tongass Water Atlas, a guide for forecasting run-off and potential erosion of land, and contamination of water and soil in National Forests. The information gathered helped develop guidelines for safe road construction and maintenance. This data is still used today.

His interest in sailing was re-kindled after moving to Alaska. Louie taught himself to make all types of sails, setting up Mariner Sails in 1979. But his special area of interest was traditional hand-made sails. He went to Europe to study the history of sail-making, researching ships including the Vasa and the Mary Rose, and writing and collaborating on several papers and monographs on historic sails. He spoke at the 2016 IGKT meeting on Ditty Bags and his book *Making a Sailor's Traditional Ditty Bag and Sea Bag* is available for a kindle on Amazon.

He had written most of a book tentatively entitled *The Evolution of Sails and Sailmaking Between 1500 and 1940*. Plans are in progress to complete the work.

Louie was truly a 'renaissance man'. He was a scientist, artisan, athlete, outdoorsman, and artist; and he could do sleight-of-hand magic!

He painted lovely small watercolours, made detailed pen-and-ink drawings (both of scenery and to illustrate knots and sail-making techniques) and drew cartoons and caricatures.

He instructed knot tying courses and authored books on knotting. His knot tying skills were amazing and his stitching on sails rivalled the work by a fine seamstress.

Louie is survived by his wife, Jean; sister, Sonia Raymond; daughter, Bonnie; son, Dan, and his wife, Estell. The grandchildren are: Jason and his fiancée, Ashley; Saxon and his wife Marissa; Cedar, her husband, Dariel, and their daughter (Louie's great-granddaughter), Iris; Hannah, Fisher, Elias, and Estella.

Jean Bartos & Des Pawson

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All branch details as on IGKT website on 13/5/2020

BACK COVER: A FID WITH A HANDY LOOP (see p 15)

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A New System of Knotting by Harry Asher - A reprint. Asher's genius is shown really clearly	£7.00
The Sailor and his Knots - A unique reprint of Ashley's 1925 work	£10.00
A Practical Approach to Circular Knotworks by A & C Åström - Circular knots based on a Celtic pattern	£10.00
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Thou Shalt Knot – Clifford Ashley Exhibition 2017-18. Ed. Christina Connett N. American members please order from Amazon	£11.50
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If you do not use e-mail, please contact the

IGKT Supplies Secretary

10 Chine Avenue, Bittern, Southampton SO19 7JF UK

Please note: During the Covid-19 epidemic, only small items may be available from Andy Hudson, our Supplies Secretary. As a high-risk person, he would rather not visit the post office to dispatch larger items.